



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/534,107

11/22/2006

Bernhard Mattes

10191/3851

5194

26646 7590 03/30/2011

KENYON & KENYON LLP  
ONE BROADWAY  
NEW YORK, NY 10004

EXAMINER

PIPALA, EDWARD J

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

03/30/2011

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/534,107	<b>Applicant(s)</b> MATTES ET AL.	
	<b>Examiner</b> EDWARD PIPALA	<b>Art Unit</b> 3663	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17,18,21-24,27-29 and 31-43 is/are pending in the application.
- 4a) Of the above claim(s) 39-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17,18,21-24 and 27-29 is/are rejected.
- 7) ☒ Claim(s) 39-43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office action is in response to Applicant's amendments and remarks of 1/10/11.  
Claims 17, 18, 21-24, 27-29 and 31-43 are presently pending.

### ***Claim Objections***

2. Claims objected to under 37 CFR 1.75(c) as being in improper form because each of dependent claims 39-43 is indicated as being dependent on canceled claim 11, accordingly claims 39-43 have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-19, 21-24, 27-29 and 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ari (6,813,370) in view of Hart, Jr. et al. (6,130,706).

Applicant's exemplary claim 17 presently recites:

A method for controlling vehicle dynamics in a motor vehicle, comprising:

recording, by at least one sensor, at least one measured value;

generating, by at least one image sensor system, image information from surroundings of a motor-vehicle to control the vehicle dynamics, the at least one image sensor system including at least two image sensors to record a same scene for the

Art Unit: 3663

image information; determining at least one fixed image point from the generated image information each image point corresponding to a stationary object;

determining image coordinates of at least one fixed image point in at least two images of one image sequence;

determining a sampling vector drawn from a zero coordinate point of each of the at least two image sensors to each of the fixed image points;

determining x, y and z component values of each sampling vector;

determining the at least one measured value as a function of a variation in the sampling vector component values from one image in the image sequence to a subsequent image in the image sequence, the measured value being used for vehicle dynamics control; and

controlling, by at least one actuator, vehicle dynamics as a function of the at least one measured value and the image information.

The abstract of Arai teaches a lane recognition apparatus which makes use of a pair of stereo images of a scene in front of the vehicle in front of the vehicle obtained from a stereoscopic camera (containing two image sensors) for calculating distance information from roadway lane markings. Figure 1 of Ari shows the stereoscopic camera (1), stereo image processing section (6), an image data memory (8), a road recognition section (10), a solid object recognition section (11), as well as actuator systems (13, 14, 15), and a vehicle behavior (dynamics) control section 16.

The background of the invention discloses monitoring vehicle surroundings and recognizing road configurations, where the summary of the invention near the bottom of col. 1 teaches lane recognition as well as recognizing the position of lane markers in real space (i.e., x, y, z coordinates), and using distance information derived from a pair of picture images.

In col. 7, line 13 Arai teaches consideration of behaviors of the vehicle, including forward and backward movements as well as pitching and the like (vehicle dynamics), where beginning in col. 11, lines 10+ Arai particularly discusses the use of parallax and relates pixels in determining distance data, including identifying the (x, y, z) coordinates of a point in real space (for a sampling vector), where x denotes a position along the widthwise direction of the vehicle, y denotes a position in the vertical (height) direction of the vehicle, and z denotes a position in the longitudinal direction of the vehicle (a distance in front of the vehicle). Col. 11, line 50+ further teaches consideration of the roll angle of the own vehicle or a bank angle of the road, as part of a road height model, and is further discussed in col. 13, line 41+.

Hart, Jr. et al. teaches a process for determining vehicle dynamics, including determining the slip angle of a vehicle by optically monitoring movement in one or more of the camera images of the road surface as the vehicle passes over it (from the abstract), as shown in figure 2B, and further discussed in the middle and bottom portions of col. 1 with respect to vehicle dynamics including yaw, lateral acceleration, longitudinal acceleration and steering angle.

Accordingly, it would have been obvious to one of ordinary skill in the art to have incorporated the teachings of Hart, Jr et al. with respect to sensing or determining dynamic vehicle parameters relating to a sampling vector from a zero coordinate point for a sequence of images, within the context of the lane marker recognition and vehicle control system of Arai, in order to determine not only relative positioning of the vehicle with respect to lane markers but also determine vehicle attitude through yaw and lateral acceleration vehicle attitude detection, so as to enable more an implementation of a vehicle dynamics actuator within the context of the scene image position information of Ari, and controlling at least one vehicle dynamics control actuator in response to the measured relative position values.

***Response to Arguments***

4. Applicant's arguments filed 1/10/11 have been considered but they are not persuasive, in that while Applicant's amended claims now additionally recite determining the x, y, and z coordinates of a "sampling vector", whereas Ari clearly already teaches the use of a stereoscopic relative vehicle position determination system which makes use of an x, y, z coordinate system as part of a vehicle control system and Hart, Jr. et al. additionally provides the teaching of comparing successive images of such a vision based vehicle control system.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDWARD PIPALA whose telephone number is (571)272-1360. The examiner can normally be reached on M-F 9:30 - 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.